CONFIRMATION AND EXPANSION OF THE REPORTED DISTRIBUTION OF TWO SPECIES OF IDAHO HERPTILES

William F. Laurance^{1,2} and Timothy D. Revnolds^{1,3}

ABSTRACT.- The county by county distribution of the tiger salamander (Ambustoma tigrinum) and night snake (Hypsiglena torquata) in Idaho from previous reports is presented. This is augmented and expanded from recent findings.

Herptiles, especially amphibians, are often neglected in environmental surveys and biological inventories of any particular geographic area. This circumstance is magnified in several western states, like Idaho, which have a low population and a small scientific community. Generally speaking, then, portions of the published range maps for some western herptiles (e.g., Stebbins 1966) are based on limited actual field data. Instead, range maps are often constructed based on the known climatic, topographic, and habitat preferences of the species in question, coupled with known occurrences of disjunct populations and tempered with empirical wisdom. The objective of this paper is to confirm the occurrence of the tiger salamander (Ambystoma tigrinum) and night snake (Hypsiglena torquata) within the Idaho ranges indicated by Stebbins (1966), based on published reports, and augment these data with recent findings.

METHODS AND MATERIALS

Our interest in the distribution of these two herptiles was aroused when specimens of each, collected out of their documented range in Idaho, were brought to us. We then reviewed the scientific literature concerning the distribution of reptiles and amphibians, as well as historical accounts of early expeditions into Idaho, to generate a county by county list of records for both species. In addition, we interviewed the lower vertebrate

specialists at Treasure Valley Community College, Ontario, Oregon; College of Idaho, Caldwell; College of Southern Idaho, Twin Falls; Northwest Nazarene College, Nampa, Idaho; Idaho State University, Pocatello; and University of Idaho, Moscow; plus Idaho Department of Fish and Game personnel and several local residents interested in reptiles and amphibians.

RESULTS AND DISCUSSION

The range for the tiger salamander in Idaho illustrated in Stebbins (1966, map 5) encompasses all or part of 30 counties in the northern and eastern thirds of the state: Bannock, Bear Lake, Benewah, Bingham, Blaine, Bonner, Bonneville, Boundary, Butte, Caribou, Cassia, Clark, Clearwater, Custer, Franklin, Fremont, Idaho, Jefferson, Jerome, Kootenai, Latah, Lemhi, Lewis, Lincoln, Madison, Minidoka, Nez Perce, Oneida, Power, Shoshone, and Teton (Fig. 1). Although Dumas (1957) and Linder and Fichter (1977) suggest that tiger salamanders are probably distributed throughout the state, with the exception of a few counties in the extreme southwest, we were only able to find published records of occurrence for 2 northern and 10 eastern counties (Table 1, Fig. 1). These two disjunct populations most likely represent two subspecies: the blotched tiger salamander (A.t. melanostictum) in the north and the Arizona tiger salamander (A.t. nebulosum) in southeast Idaho (Nussbaum et al. 1983).

^{(Biology} Department, Boise State University, Boise, Idaho 83725. ^{(Current} address: Museum of Vertebrate Zoology, University of California, 2593 Life Sciences Building, Berkeley, California 94720.

Current address: U.S. Department of Energy, Radioecological and Environmental Science Laboratory, 550 Second Street, Idaho Falls, Idaho 83401.



Fig. 1. County by county range extensions for *Amby-stoma tigrinum* in Idaho, compared with the previously documented range and with the illustrated Idaho range in Stebbins 1966. Black dots indicate the sites where new specimens were collected.

We were unable to locate any published records of tiger salamanders in central Idaho. We have, however, documented two wild populations of tiger salamanders in southwest Idaho, precisely where Linder and Fichter (1977) predicted they would not occur (Fig. 1). The Ada County locality was 19 km SSW of Boise, and the Canyon County population was located 5.5 km E of Caldwell (R. Foote, pers. comm., 1983. Department of Biology, Treasure Valley Community College, Ontario, Oregon). We have not been able to verify whether these populations are native to the area or are introduced. Specimens collected from Ada County most closely resemble the description given by Nussbaum et al. (1983) for the subspecies A.t. melanostictum.

Although tiger salamanders have been collected from a number of localities in south-



Fig. 2. County range extension for *Hypsiglena tor-quata* in Idaho, compared with the previously documented range and with the illustrated Idaho range in Stebbins 1966. The black dot indicates the site where the new specimen was collected.

eastern Idaho, northern Idaho, and the adjacent eastern half of Washington, no previously published records existed for the northern Great Basin areas of southwest Idaho and eastern Oregon. The records presented here for southwest Idaho extend the range of the species in Idaho about 320 km westward. Additionally, R. M. Storm (pers. comm., 1983. Department of Zoology, Oregon State University, Corvallis, Oregon) recently found tiger salamanders on Malheur National Wildlife Refuge, Harney County, in eastern Oregon. Although it is not known if this represents a natural or introduced population, this find extends the known range of tiger salamanders another 180 km westward in the northern Great Basin. Further research may reveal additional disjunct populations of the tiger salamander scattered through appropriate habitats in Idaho and elsewhere in the northern Great Basin.

TABLE 1. County by county distribution records for *Ambystoma tigrinum* in Idaho. Asterisks indicate first records for that county.

| County | Reference |
|------------|---|
| ° Ada | Laurance and Reynolds (pers. obs., 1982) ^a |
| Bannock | Tanner (1941) |
| Bear Lake | Dunn (1940) |
| Bingham | Nussbaum et al. (1983) |
| Bonneville | Nussbaum et al. (1983) |
| °Canyon | Foote, R. (pers. comm., 1982. Dept. of |
| | Biology, Treasure Valley Community |
| | College, Ontario, Oregon) |
| Franklin | Nussbaum et al. (1983) |
| Fremont | Tanner (1941) |
| Jefferson | Nussbaum et al. (1983) |
| Kootenai | Dunn (1940) |
| Latah | Dunn (1940) |
| Madison | Tanner (1941) |
| Oneida | Dunn (1940) |
| Power | Nussbaum et al. (1983) |

^aSpecimen in the Vertebrate Museum at Boise State University, Boise, Idaho.

The night snake in Idaho is near the elevational extremes of its distribution in North America. Stebbins' (1966, map 175) illustrated range includes counties in the southern portion of the state: Ada, Cassia, Canyon, Elmore, Franklin, Gooding, Jerome, Lincoln, Minidoka, Oneida, and Power counties primarily (Fig. 2). The majority of the documented reports we found for this species were for five southwest counties: Ada, Canyon, Gem, Elmore, and Owyhee. The remaining reports were from Blaine (one specimen) and Bannock (two specimens) counties in southeastern Idaho (Table 2). The records from Blaine, Bannock, and Gem counties, coupled with a new report and specimen from Boise County, 22.5 km NW of Boise (C. W. Baker, pers. comm., 1982. Department of Biology, Boise State University, Boise, Idaho), suggest the Idaho range is somewhat more northerly than formerly designated, and may extend into the foothills of the northern Rocky Mountains in central Idaho.

No night snakes have been recorded from the southern tier of counties in the center of the state. The small number of night snake specimens collected elsewhere in Idaho may be the result of the secretive and nocturnal nature of this species, rather than as an actual result of a low population density or restricted distribution. Diller and Johnson (1982) report that density estimates of snakes in the

TABLE 2. County by county distribution records for *Hypsiglena torquata* in Idaho. Asterisks indicate first records for that county.

| County | Reference |
|---------|---|
| Ada | Frwin (1925) |
| Bannock | Linder and Fichter (1977) |
| Blaine | Linder and Fichter (1977) |
| °Boise | Baker, C. W. (pers. comm., 1982. Dept. of |
| | Biology, Boise State University, Boise, |
| | Idaho) ^a |
| Canyon | Slater (1941) |
| Elmore | Diller and Wallace (1981) |
| Gem | Diller and Wallace (1981) |
| Owyhee | Diller and Wallace (1981) |

 $^{\rm a}{\rm Specimen}$ in the Vertebrate Museum at Boise State University, Boise, Idaho.

Snake River Birds of Prey Area in southwest Idaho reveal that night snakes are actually the most abundant species present in that area. If this disparity between real and apparent population size exists in other areas of the state, then further censusing may fill in distributional gaps for the night snake in Idaho, particularly in the southcentral counties.

Acknowledgments

We sincerely thank Dr. Charles W. Baker and Joe Maloney, whose collections of specimens truly initiated our efforts to document the ranges of *Ambystoma tigrinum* and *Hypsiglena torquata* in Idaho. Collectively we thank all the university and college biologists, state agency personnel, and interested citizens for the valuable contributions. Drs. Al Linder and Robert Stebbins reviewed the original manuscript. We thank them for their efforts.

LITERATURE CITED

- DILLER, L. D., AND D. R. JOHNSON. 1982. Ecology of reptiles in the Snake River Birds of Prey Area. Contract Final Rep. USDI Bur. Land Manage., Idaho State Office. 107 pp.
- DILLER, L. D., AND R. L. WALLACE. 1981. Additional distribution records and abundance of three species of snakes in southwestern Idaho. Great Basin Nat. 41:154–158.
- DUNN, E. R. 1940. The races of Ambystoma tigrinum. Copeia 1940:154-162.
- DUMAS, P. C. 1957. Introductory survey of the amphibians and reptiles of Idaho. Processed by Univ. of Idaho. 15 pp.

ERWIN, R. P. 1925. Snakes in Idaho. Copeia 139:6-7.

- LINDER, D. D., AND E. FICHTER. 1977. The amphibians and reptiles of Idaho. Idaho State Univ. Press, Pocatello. 78 pp.
- NUSSBAUM, R. A., E. D. BRODIE, AND R. M. STORM. 1983. The amphibians and reptiles of the Pacific Northwest. Univ. Press of Idaho, Moscow. 322 pp.
- SLATER, J. R. 1941. The distribution of amphibians and reptiles in Idaho. Occ. Pap. Biol., College of Puget Sound. No. 14:78–109.
- STEBBINS, R. C. 1966. A field guide to western reptiles and amphibians. Houghton Mifflin Co., Boston i-xiv + 279 pp.
- TANNER, W. W. 1941. The reptiles and amphibians of Idaho No. 1. Great Basin Nat. 2:87-97.